

### **REMARKS**

The Office Action dated March 14, 2007 has been received and carefully noted. The above new claims and the following remarks are submitted as a full and complete response thereto.

Claims 32-38 have been added further defining the scope of the present application. No new matter is being presented, and approval and entry are respectfully requested.

Applicants gratefully acknowledge the indication in the Office Action that claims 2, 3, and 24-26 would be allowable if rewritten into independent form. However, as discussed below, Applicants respectfully submit that these claims are allowable in their present form.

Claims 1-9, 13-15, 17, 21, and 23-38 are pending and under consideration.

### **REJECTION UNDER 35 U.S.C. § 103:**

*On page 2 of the Office Action, claims 1, 4, 6-8, 10-21, and 27-31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Application No. 2002/065785 to Tsuda ("Tsuda") in view of U.S. Application No. 2003/0119501 to Kim ("Kim") and U.S. Patent No. 6,751,459 to Lee et al. ("Lee"). The Office Action took the position that Tsuda, Kim, and Lee disclose all the aspects of independent claims 1, 4, 6, 14, 21, 27, 28, and 30 and related dependent claims. It is respectfully asserted that, for at least the*

*reasons provided herein below, Tsuda, Kim, and Lee fail to teach or suggest the recitations of the pending claims. Reconsideration is requested.*

Independent claim 1, upon which claims 2, 3, 24-26, and 37-38 are dependent, recites a method, including maintaining in a mobile communication system subscriber's location information, receiving a message from subscriber's user equipment, said message indicating that an address of a certificate provisioning gateway for certificate issuance and delivery procedure in a visited network is requested by the subscriber's user equipment, the certificate provisioning gateway serving at least one certificate authority, and determining, in response to receiving the message, on the basis of the subscriber's location information, the address of the certificate provisioning gateway.

Independent claim 4, upon which claim 5 is dependent, recites a method, including receiving in a mobile communication system a message from subscriber's user equipment, the message indicating subscriber's location information in a visited network of the subscriber, and determining, in response to the message, on the basis of the subscriber's location information an address of a certificate provisioning gateway in the visited network, the certificate provisioning gateway serving at least one certificate authority. The address of the certificate provisioning gateway is determined for certificate issuance and delivery procedure in the visited network.

Independent claim 6, upon which claims 7-9 and 13 are dependent, recites a method, including authenticating the subscriber, and transmitting during the subscriber authentication to the user equipment at least part of the information required for obtaining

a certificate from a certificate issuance service in another network than a home network in a mobile communication system after the subscriber authentication. The part of the information includes at least one from a group comprising an address of a certificate provisioning gateway via which the certificate issuance service is provided in the other network, the certificate provisioning gateway serving at least one certificate authority, a public key required for the certificate issuance service in the other network, and an indication of the protocol required for the certificate issuance service in the other network

Independent claim 14, upon which claims 15 and 17 are dependent, recites a method, including authenticating a subscriber, receiving, from subscriber's user equipment, a message relating to a certificate issuance service in another network than a home network in a mobile communication system, and transmitting, in response to the message, to the user equipment in a reply message at least part of information required for obtaining a certificate from the certificate issuance service in the other network. The part of the information including at least one from a group comprising an address of a certificate provisioning gateway via which the certificate issuance service is provided in the other network, the certificate provisioning gateway serving at least one certificate authority, a public key required for the certificate issuance service in the other network, and an indication of the protocol required for the certificate issuance service in the other network.

Independent claim 21, upon which claims 23 is dependent, recites a mobile communication system, including at least user equipment, a home network for the user

equipment, and a visited network comprising at least a certificate provisioning gateway for a certificate issuance and delivery procedure, said certificate provisioning gateway serving a certificate authority. An address of the certificate provisioning gateway is determined on the basis of location information of the user equipment in response to a sent message from the user equipment, said message indicating that an address of a certificate provisioning gateway for certificate issuance and delivery procedure in a visited network is requested by the user equipment.

Independent claim 27 recites a method, including authenticating a subscriber, and transmitting after the authentication via an authenticated channel to subscriber's user equipment at least part of information required for a certificate of issuance service in another network than a home network of the subscriber, said at least part of the information containing information required for obtaining a certificate from the certificate issuance service in the other network.

Independent claim 28, upon which claims 29 and 32-36 are dependent, recites a certificate provisioning gateway serving a certificate authority in a mobile communication system. The certificate provisioning gateway is in a home network of a subscriber and is configured to determine, in response to receiving a message indicating a request for a certificate issuance service from the subscriber, an address of another certificate provisioning gateway required for providing the certificate issuance service for the subscriber on the basis of subscriber's location information, said another certificate provisioning gateway being in another network than the home network.

Independent claim 30, upon which claim 31 is dependent, recites a user equipment in a mobile communication system. The user equipment is configured to receive at least part of information required for a certificate issuance service in a location network of the user equipment after the user equipment has been authenticated, said location network being a visited network and said at least part of the information containing information required for obtaining a certificate from the certificate issuance service in the visited network.

As will be discussed below, Tsuda, Kim, and Lee fail to disclose or suggest the elements of any of the presently pending claims.

Tsuda generally describes a function for carrying out AAA processing and authentication and accounting processes carried out between AAA function (AAAM) on a mobile node and a visited network or the mobile node and a home network. See paragraph [0054]. When the mobile node is connected to the visited network, for example, the mobile node 1010 transmits a registration request to the home agent or the AAAH server according a Mobile IP protocol. See FIG. 1 and paragraphs [0061]-[0065].

Furthermore, Tsuda describes that a foreign agent sends periodically an advertisement including its own address (S101), and, thus, the mobile terminal receives the address without requesting. See, at least, FIGS. 10 and 11 of Tsuda. In Tsuda, when the mobile terminal notices that it has changed sub-network, it sends a registration request S102 to the foreign agent using the address the mobile terminal received in the

advertisement. Then, the mobile terminal is authenticated and keys changed, such keys being used to encrypt communication.

Kim generally describes how to create and update home zone information of a subscriber. FIG. 5 illustrates a base station system parameter database that stores every base station's inherent ID (Bts\_id), location information of each base station, and so forth. See paragraph [0040]. The base stations located within the designated distance from the subscriber's residence regard or decide all sectors as a service sector. The exception range in Kim is a value necessary for establishing the designated distance through which the base stations made the decision aforementioned. Kim, thus, describes how to create and update home zone information of a subscriber. The base station ID in the home zone information remains the same regardless where the subscriber locates. Kim also provides to select subscribers under the influence, those subscribers living within a designated distance centering certain base stations.

Kim generally describes a method and apparatus for updating information in a personal mobility database server with information concerning a user's nomadicity. When the user travels from one place to another, the user registers with a PMDNS server at an IP port for computing communications. The PMDNS takes user's terminal personalization, together with usage profile, session characteristics into account to map a party's identifier to a terminal's identifier. The IP address of the user's current location is used in concert with the terminal's identifier, which is itself an IP address, to route incoming computing communications connection requests to the current location of the

user. This information is returned by the PMDNS directory server to the access network for the setup of the communications.

However, a combination of Tsuda, Kim, and Lee would not provide for all the recitations of independent claims 1, 4, 6, 14, 21, 27, 28, and 30. For instance, Tsuda is silent as to teaching or suggesting, at least, “receiving a message from subscriber’s user equipment, said message indicating that **an address of a certificate provisioning gateway for certificate issuance and delivery procedure in a visited network** is requested by the subscriber’s user equipment, the certificate provisioning gateway serving at least one certificate authority,” as recited in independent claim 1. In addition, Tsuda does not teach or suggest that a message is received from a user equipment requesting the address of a network element. Rather, Tsuda describes sending from a network node advertising messages containing an address without any request from the user equipment.

Also, Tsuda discloses that AAA servers are for authentication, authorization, and accounting, (See paragraph [0004]) and that AAA-H server locates in a home network and AAA-F server in a visited network. Further, Tsuda discloses in paragraph [0186] a certificate authority as a separate entity, not included in the AAA servers, and states that the certificate authority may be used in addition to the AAA servers. Thus, Tsuda describes that AAA-servers cannot be interpreted as certificate authorities. Kim and Lee are completely devoid of any teaching or suggestion regarding AAA servers and certificate authorities.

Similarly to Tsuda, Kim does not teach that the address of the network node is requested by the subscriber's user equipment. Kim is limited to providing a creation and update home zone information of a subscriber. Although Kim describes, with respect to FIG. 5, that the base station system parameter database stores every base station's inherent ID, location information of each base station like latitude and longitude, information about each sector like angle, system delay, and service range, exception range, change filed and so forth, Kim does not teach or suggest that a user equipment sends a message including an address of a certificate provisioning gateway **for certificate issuance and delivery procedure** in a visited network, where the certificate provisioning gateway serves at least one certificate authority. (Emphasis added). Thus, a combination of Tsuda and Kim would fail to teach all the recitations of independent claim 1.

Furthermore, independent claim 1 recites a certificate issuance and the certificate provisioning gateway serving at least one certificate authority, whereas Tsuda and Lee relates to routing services and Kim relates to home zone services. Tsuda and Lee describes how to find a mobile terminal when the terminal has a fixed IP address used as its identification, but the actual IP address of the terminal depends on the terminal's location. Kim, in turn, describes how to update a home zone list when a configuration of a cell changes. Clearly, Tsuda, Kim, and Lee as silent as to teaching or suggesting that a user equipment could use a certificate issuance services of a visited network, or of another network than a home network of the user equipment. On the contrary, Tsuda



describes for example in paragraph [0056] to always contact the AAA server in the home network to authenticate the user.

Furthermore, certificate authorities are provided as separate entities in the present application, and for one skilled in the art a certificate authority is a trusted third party issuing certificates. Thus, one skilled in the art would not interpret an authentication, authorization, and accounting server as a certificate authority issuing certificates, and none of the cited references describe such feature.

A combination of Tsuda, Kim, and Lee would teach away from the claimed invention because the combination would teach all network-related data should be sent in advertise messages. As done in the Office Action, providing that a combination of Tsuda, Kim, and Lee would teach the recitations of the claims is purely based on hindsight. “To support the conclusion that the claimed combination is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed combination. It is to be noted that simplicity and hindsight are not proper criteria for resolving the issue of obviousness.” *Ex Parte Clapp*, 227 USPQ 972, 973 (B.P.A.I. 1985).

For similar reasons, Tsuda and Kim do not teach or suggest, “determining, **in response to the message**, on the basis of the subscriber’s location information, an address of a network node in the visited network, wherein the address of the network node is determined for certificate issuance and delivery procedure in the visited network,” emphasis added, as recited in independent claim 4, “wherein an **address of**

**the network node is determined** on the basis of location information of the user equipment **in response to a sent message** from the user equipment, said message indicating than an address of a network node for certificate issuance and delivery procedure in a visited network is requested by the user equipment,” emphasis added, as recited in independent claim 21, and “wherein the network node is in a home network of a subscriber and is configured to determine, **in response to receiving a message indicating a request for a certificate issuance service from the subscriber, an address of another network node** required for providing the certificate issuance service for the subscriber on the basis of subscriber’s location information,” emphasis added, as recited in independent claim 28.

Regarding independent claim 6, paragraph [0069] of Tsuda generally describes accounting and disclosing how subscribers are billed and paragraph [00186] of Tsuda describes that public key information or certificate authority may be used in addition to authentication. However, Tsuda fails to teach or suggest that “an address of a certificate provisioning gateway via which the certificate issuance service is provided in the other network, the certificate provisioning gateway serving at least one certificate authority, a public key required for the certificate issuance service in the other network, and an indication of the protocol required for the certificate issuance service in the other network,” as recited in independent claims 6 and 14. Kim is devoid of any teaching or suggestion providing such features. Based on the description of Tsuda, the certificate authority used locates the home network, or the public key is used for the home network,

and, therefore, one skilled in the art would assume that they are stored in the user equipment.

Regarding independent claims 27 and 30, paragraph [0035] of Tsuda fails to teach or suggest that information related to a certificate issuance service is sent after authentication. Kim is devoid of any teaching or suggestion providing such features. Specifically, Tsuda and Kim fail to teach or suggest, at least, “transmitting after the authentication via an authenticated channel to subscriber’s user equipment at least part of information required for a certificate of issuance service in another network than a home network of the subscriber, said at least part of the information containing information required for obtaining a certificate from the certificate issuance service in the other network,” as recited in independent claim 27, and “wherein the user equipment is configured to receive at least part of information required for a certificate issuance service in a location network of the user equipment after the user equipment has been authenticated, said location network being a visited network and said at least part of the information containing information required for obtaining a certificate from the certificate issuance service in the visited network,” as recited in independent claim 30.

Furthermore, Kim describes that the stored information does not depend on location information of the subscriber. Kim also does not teach or suggest determining, on the basis of the subscriber’s location information, the address of the network node. The base station system parameter database storing location information of each base station alone does not teach or suggest a determination of an address of a network node.

In view of the descriptions of Tsuda and Kim, Kim does not cure the deficiencies of Tsuda. A combination of Tsuda and Kim would fail to teach or suggest all the recitations of the present claims. Instead, the combination of Tsuda and Kim would simply provide that mobile IP network could have home zone information and provide home zone services in a subnet using an address of AAAH. It would also include a database storing location information of each base station. However, there is no teaching or suggestion in the combination of Tsuda and Kim providing receiving a message from subscriber's user equipment, said message indicating that an address of a network node for certificate issuance and delivery procedure in a visited network is requested by the subscriber's user equipment and transmitting after the authentication via an authenticated channel to subscriber's user equipment at least part of information required for a certificate of issuance service in another network than a home network of the subscriber.

Accordingly, in view of the foregoing, it is respectfully requested that independent claims 1, 4, 6, 14, 21, 27, 28, and 30 and related dependent claims be allowed.

*On page 7 of the Office Action, claims 5, 9, and 23 were rejected under 35 U.S.C. § 103 as being unpatentable over Tsuda, Kim, Lee, and further in view of U.S. Publication No. 2002/0145561 to Sandhu et al. ("Sandhu"). The Office Action took the position that Tsuda, Kim, Lee, and Sandhu disclose all the aspects of claims 5, 9, and 23. The rejection is traversed and reconsideration is requested.*

Dependent claim 5 depends from independent claim 4, dependent claim 9 depends from independent claim 6, and dependent claim 23 depends from independent claim 21. The arguments presented above supporting the patentability of independent claims 4, 6, and 21 in view of Tsuda, Kim, and Lee are incorporated herein.

As will be discussed below, Tsuda, Kim, Lee, and Sandhu fail to disclose or suggest the elements of any of the presently pending claims.

Sandhu generally describes a mobile unit regularly obtaining its location through a location-determining technology, such as GPS, and sending the location to a service provider computer. See abstract. The service provider computer maintains a database of the current location of all the mobile units, and provides the location of the mobile units to each of the mobile units.

However, Sandhu does not cure the deficiencies of Tsuda, Kim, and Lee. Sandhu limits its description of using a plurality of mobile units to locate one another using multiple satellites (i.e., GPS). Similarly to Tsuda, Kim, and Lee, Sandhu does not teach or suggest, receiving a message from subscriber's user equipment, said message indicating that an address of a certificate provisioning gateway for certificate issuance and delivery procedure in a visited network is requested by the subscriber's user equipment, the certificate provisioning gateway serving at least one certificate authority as in the present application.

In view of the description provided in the references, a combination of Tsuda, Kim, Lee, and Sandhu would describe that mobile IP networks could have home zone

information and provide home zone services in the subnet using the address of AAAH and that mobile user terminals could obtain location information from GPS and forward such information to a known address wherefrom location information may be delivered to indicate recipients. Accordingly, a combination of Tsuda, Kim, Lee, and Sandhu would fail to teach or suggest all the recitations of independent claims 4, 6, and 21.

Accordingly, in view of the foregoing, it is respectfully requested that independent claims 4, 6, and 21 and related dependent claims 5, 9, and 23 be allowed.

#### **CONCLUSION:**

In view of the above, Applicant respectfully submits that the claimed invention recites subject matter which is neither disclosed nor suggested in the cited prior art. Applicant further submits that the subject matter is more than sufficient to render the claimed invention unobvious to a person of skill in the art. Applicant therefore respectfully requests that each of claims 1, 4-9, 13-15, 17, 21, 23, 27-38 be found allowable and, along with allowed claims 2-3 and 24-26, this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Alicia Choi', written over a horizontal line.

Alicia M. Choi  
Registration No. 46,621

**Customer No. 32294**  
SQUIRE, SANDERS & DEMPSEY LLP  
14<sup>TH</sup> Floor  
8000 Towers Crescent Drive  
Tysons Corner, Virginia 22182-2700  
Telephone: 703-720-7800  
Fax: 703-720-7802

AMC:dc

Enclosures: Petition for Extension of Time  
Additional Claim Fee Transmittal  
Check No.: 16845